Notebook, N-10-07-29

July 29 1915

Experiment on
tetranaphthalene + Shellac finding
a Chemical to keep the shellac
from decomposing

½ Tetrachloronaphthalene
½ Shellac -
Melt Tetra. Then add the
shellac in small bits
stirring all the time
until all in —

Then add ½ more of
X — and keep it at
a temperature where it
is about as liquid as
it was before X added
See How long it takes
before it goes to a jelly

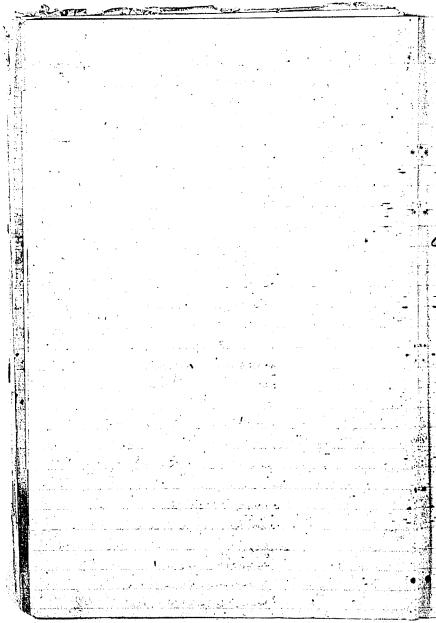
	Shellac grams	Stearic grams	Solvent cc	Name of solvent	Volume	Temp	Soft	Hard	Brittle	Tough	Remarks
1	5	5	2	salicylic acid.	1	110	m	m		"	To Mush Solvent
2	5	5	"	analine	3	110		m		"	" " "
3	5	5	½	Phenol		110				"	
4	5	5	2	Ortho Ether analine	6	110		m		"	ok looks good
5	5	5	½	Creasote	3	110		m		"	ng
6	5	5	2	toluene	1½	110		m	s		Flaxin Excess
7	5	5	2	Naphtholine Bichromate	2	110		v		"	ok
8	5	5	2	" alpha mono Nitro	2½	110				"	" " "
9	5	5	2	Xylidine	9	115	"			"	to soft
10	5	5	2	Creasol	1	115		v		"	looks good
11	5	5	2	Palmatic Oleic + Stearic acid	7	112				ng	
12	5	5	2	The wax from Shellac	1¼	115		m		"	ok excess of wax
13	5	5	2	Shellac free from wax	1¼	108		m		"	ok excess of wax
14	5	5	2	" " Stearic acid.	1	110	"		"	ng	dark. ng
15	5	5	2	Oleinic acid	2	110					
16	5	5	2	Pure Shellac + Common Shellac	2	110			"	"	ok looks good
17	5	5	2	Palmatic acid	2	110	"		"	"	Rubbery
18	5	5	2	Stearic acid	2	110		m	"	"	Waxy
19	5	5	2	anisol	2½	110		m	"	"	ng same as 18
20	5	5	2	Cumole	1	110	"		"	"	
21	5	5	2	Methylene Chloride	1	110	"		"	"	hard
22	5	5	2	Cumonic acid	1	110	"		"	"	
23	5	5	2	acetal	1	110	"		"	ng	
24	5	5	2	amylacetic Butteracetic	1	110					Thin hard
25	5	5	2	Ether Formic	1	110					thin very hard
26	5	5	2	" Anthracic	1	110					"

		Remarks	Yrs. Rem.
27	Camyne	thin	
28	Mong Chloro Phenole	" soft Rubbery	3
29	Methyl oxid Benzoin	" very hard waxy	1
30	ealbin Benzoin	" " " "	1
31	Carbon Bichloride	gas comes out	5
32	Phenyl Hydrozine	" " " Ng	1
3	Benzaldehyde	very hard waxy	120
4	Athriol	to soft Ng	230.
5	amyl Butyrate	very hard tough	130
6	Oildin leather	soft Rubbery	0,30
7	ext Rocut Jalapa	very hard Brittle	20
8	Cami acid	" Brittle	1.65
9	ext Kalmie flol.	Resin that Congeles thin Melts.	1½
40	Acid Carbonatin Com	soft No good.	2
1	Fusil Oil Pure.	very hard	1
2	urea Carbamide	Coagelates the shellac	Ng.
3	Benzoin acid	looks good very thin to soft	3.10
4	ext guiacum	very hard " " good	2.10
5	3rd fraction from distillation of anthracen	" " " Brittle	1.20
6	Iron Resinate	gobules in it boils by it	1.20
7	Urea Chloroestonic	soft No good	1
8	" Cassotinic	hard, tough "	1
9	Pottasium Bichromate	Thick hard waxy	1
50	Creosote Oil.	thin " "	1
1	Ozokerite	Dont mix good Hard	1.10
2	Naphthalamon alpha	looks good "	
3	Yellow Ozokerite	Dont mix	1
4	Ichthyol	hard	1.20

asphalt
Nitro Phenol
Guiacin acid
Benzyl Chloride
Pitch
sodium Silicate
sealing wax
Anthracene
Lead Resinate
Barium "
Magnesium "

hard Don't mix well 2 hrs
" same as Shellac 130
hard No good 1
" as Shellac 30
" " " 1
Don't Mix good soft 2
Very hard Not. 030
" " ,125
,145

2



	Lead Chloride	Solvent	
1	"	Nitro Analine	"
2	"	Naphthol alpha	"
3	"	Phenanthren	"
4	"	Resorcine	Mix
5	"	Acetanilide	
6	"	Benzidine	Mix
7	"	Methyl p Phenylen amine	
8	"	Cresol Acetolanilide	
9	"	Diamisidine	Solvent
10	"	Phenol Tri Bromid	Mix
1	"	Trichlor Phenol	
2	"	Benzo Phenol	
3	"	Nitro Toluol	
4	"	Phenylen diamine	Mix
5	"	Basic Hydrogenmono	
6	"	Naphthalene Bichromate	
7	"	Nitro Phenol	Mix
8	"	amido Phenol	"
9	"	Nitro Toluol	
20	"	Sebacin acid	Mix
1	"	Ortho Nitro Para Phenitidin	Mix
2		Para Dichlor Nitro Benzol	
3		Ortho nitro Phenol	
4		Dimethyl Diamido azobenzol	
5		Toluene	Mix
6		Dichlor analine	
7		Para Nitro acetanilid	Mix

28	Substances	Solvent		Mixture	Soluble
9	Sod Chloride	Ortho Toluol	substituted		No good
30	"	azobenzol		"	"
1	"	Anisole Phenole			No good
2	"	Anthracene		"	" ok
3	"	Benzamide			No good
4	"	Ortho Nitro Para toluol			No good
5	"	Para Nitro Chloro Benzol			No good
6	"	Diphenylamine			" "
7	"	Trichloro Benzene			" "
8	"	Carbazol			" "
9	"	Hexachloroethan			" "
40	"	Nitronaphtho azobenzole			
1	"	Mono alpha Nitro Naphtalin			
2	"	Azobenzole			
3	"	Nitrocinnamine	ok		soluble ok
4	"	Para Nitro Chloro Benzol			
5	"	Nitroqualin ortho			
6	"	Trichloro Phenole			
7	"	Diphenyl Phenyl			No good
8	"	Dimethylamine azobenzene			
9	"	Parabromobenzol			
50	"	Heliotropine			
1	"	Phenanthrene			
2	"	Nitro Phenol			
3	"	Benzo Phenone			No good
4	"	Nitro Naphtol			"
5	"	Acetonitro Aniline			
6	"	Dioxymanthradine			No good

56 Alpha Naphthol
7 Benzamido
8 Nitro analin Meta
9 Phenylediamines
60 Anthra Quinone
1 Monobromated Camphor
2 Phenacetine
3 Para Amido ortho Cresol
4 Ortho amido Phenol
5 Nitro Phenol Para
6 Para dichlor analine
7 Quercitron
8 Para anisidine
9 Meta Phenyl Para amido Phenol
70 Tetra Ethyl Quinone
1 Benzine Toluole
2 Ortho Toluidine
3 Nitro Benzoic acid
4 amido azo benzine
5 amido Phenol Ortho
6 " Para
7 Toluenediamine Com.
8 Para Nitro Anisol
9 Chrysoidine B extra
80 amido azo Benzole
1 Alpha Naphthol Naphthalin
2 Tetra Methyl di amido di pheny Methane
3 Toluenediamine Meta Com.

Soft Hard Mix Sol Nogood

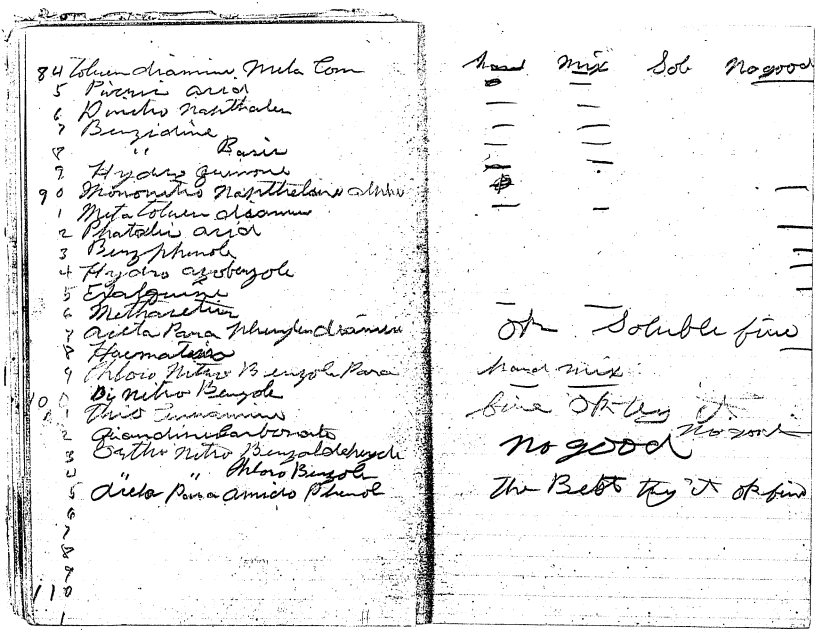
fine tryit OK

Hard Mix

Soluble

"

Hard Mix



84 Toluendiamina Mista Com
5 Picrato acido
6 Rancio Naphthalen
7 Benzidina
8 " Base
9 Hydrazo Benzol
90 Monometho Naphthalen Amido
1 Meta Toluen diamina
2 Picrato acido
3 Benzphenol
4 Hydrazo azobenzole
5 Etoxybenzol
6 Methacetin
7 Acetal Para Phenylendiamin
8 Thymolazo
9 Chloro Nitro Benzole Para
10 Di Nitro Benzole
1 Thio Thymamin
2 Giandinobarbonato
3 Ortho Nitro Benzoldehyde
4 Ortho Benzole
5 Acido Para Amido Phenol

Mixed Mix Sol No good

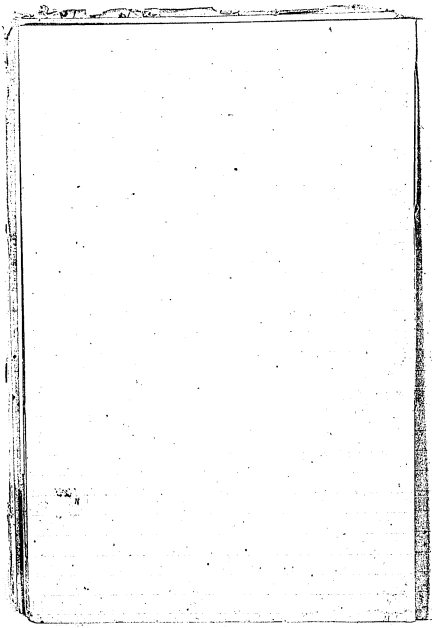
Soluble fine

Mixed mix

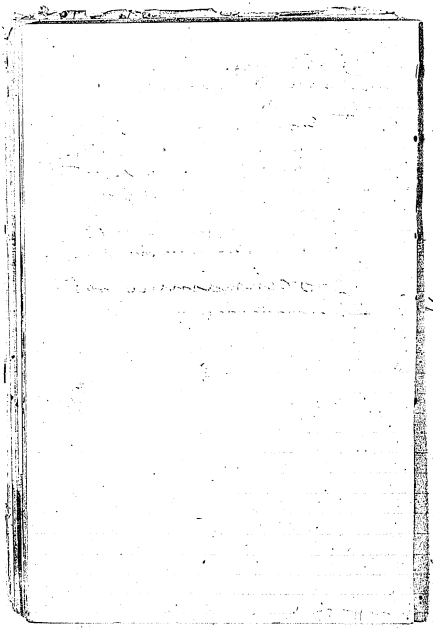
Mixed

No good

The Beets try it & find



Solvent Gr.
Lead Chromate $PbCrO_4$
Ortho amido Phenol
Anthraquinone Chromium
Cobalt Potassium Nitrite
Amido-azobenzole
Nitro Aniline Para
Acetic Paraamido-Phenole
Thiocinnamin soda
Dianisidins



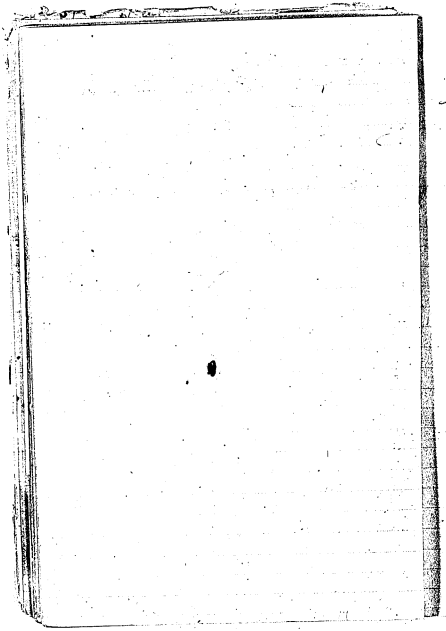
Expts Ardsworth Resin
+ Chloride of Lead.

Resin	Chloride	
2½		1 poor
"		2 better
"		3 better still
"		4 better than 3 & 1
"		5 best
"	+ Pyromucic	6 to thick
"	+ Pyromucic PB Cl 6 best yet	
"	3	
"	"	

~~to to [illegible] thick proportion~~

10 of PB Cl to 6 of Resin is the best proportion; more Chloride makes it tougher but too thick. Expts to make it thinner by solvents for the PB Cl2

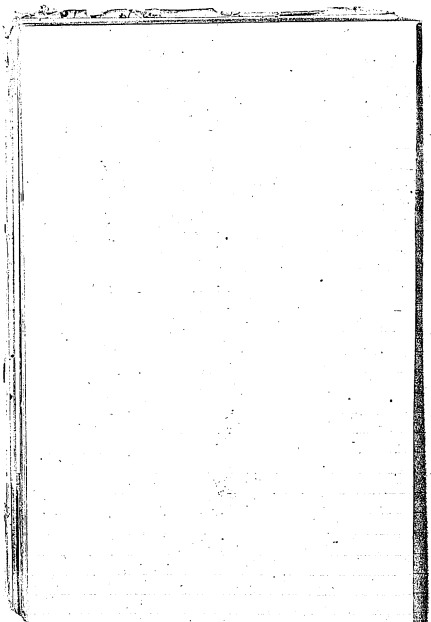
Resin	Chloride	
2½	+ 6/10 ~~Acetamide~~	No good
2½	+ 1 Pyrocinnamic + 6 Chloride	No good



10 PBCh. G Persian

1 gram of Ag Lactamber
makes 10 to 20 Blends
better than 2 to 1 in that
dont have the acetanilid
in.

Japan wax + Shellac No 3



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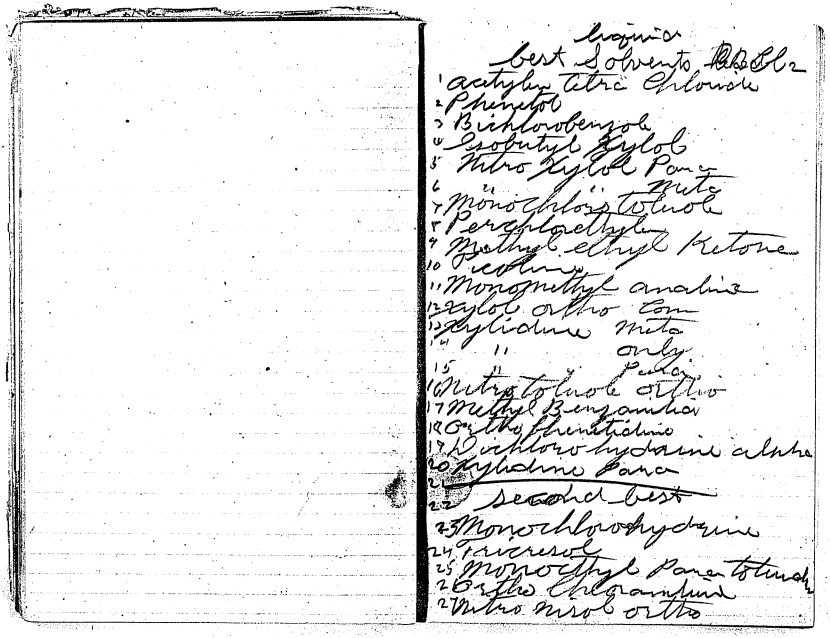
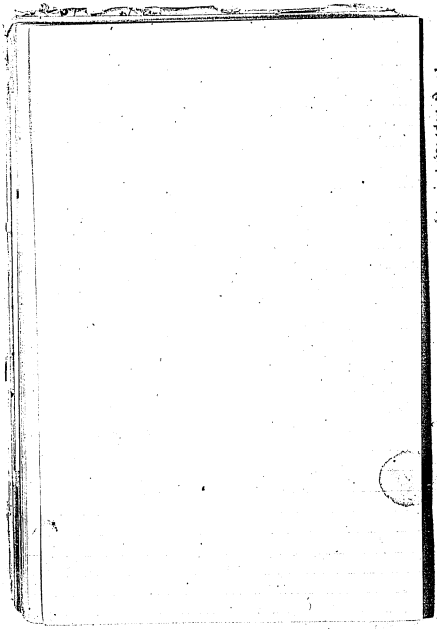
gave to Petit to put on some forms
Resin asphalt. PB Cl2
108 gm 180

found that Phenol is the proper volatile solvent to use for preventing the Resin from becoming thick and the thickening is due to the evaporation of the phenol in the Resin by 100-6 and maybe more Chloride thinning it with Phenol for fair Records Maple for it heating Makes it hard and tough.

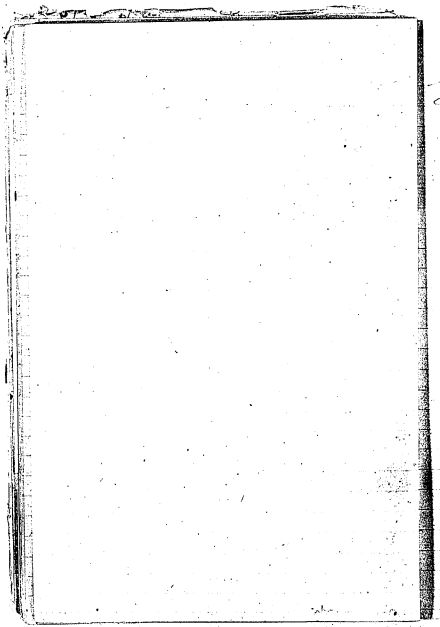
Experiments No. 1

PB Cl₂ grams	Resin grams	Phenol grams
1	5	
2	5	
3	5	
4	5	
5	5	
6	5	
7	5	
8	5	
9	5	
10	5	
11	5	
12	5	
13	5	
14	5	
15	5	
16	5	
17	5	
18	5	
19	5	
20	5	
21	5	
22	5	
23	5	
24	5	
25	5	


Isomers
best Solvents
1 acetyl tetra Chloride
2 Phenol
3 Dichlorobenzol
4 Isobutyl Xylol
5 Nitro Xylol Para
6 " Meta
7 Monochloro Toluol
8 Perpiperethylene
9 Methyl ethyl Ketone
10 Isodurene
11 Monomethyl aniline
12 Xylol ortho con
13 Xylidine meta
14 " ortho
15 " Para
16 Nitro toluol ortho
17 Methyl Benzamide
18 Ortho Phenetidine
19 Dichloro hydrine alpha
20 Xylidine Para
21
22 second best
23 Monochlorohydrine
24 Cresol
25 Monochloro Para toluol
26 Xylol Orthoamine
27 Nitro meta ortho



No good for Solvent
28. Eugenol Iso
29 Creasote
30 Trichloroethan
31 Para Aminophenol
32 Monethyl Toluidine
33 Methylol
34 Anisol
35 Anilin
36 Pyridin
37 Nitro Toluol
38 Mono Chlor Naphthalene
39 Dimethyl Aniline
40 Methylaniline
41 Toluidine Mixture
42 Methyl 10 Ephthylamin



Experiments to Treat Gun
Dye through Resin Cop
boiling with a Solvent to
displace the Phenol.

Solvents — Remarks.
Nitro Xylol
Mono Nitro benzole
Isobutyl Xylol
Nitro Naph 8 ths com.

It seems that if we
the old man are working
on Bakelite that is made
with a volatile solvent
that take the place of
phenol in the CH_2O
Reaction. Therefore
they can make a filter
on this evaporate the solvent
make a plastic object
then press this Record and
everything this is tough as
hell.